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ABSTRACT

An investigation of the relative validity of self-assessments versus standardized tests indicated that both self-assessments and objectively tested abilities were significantly related to supervisory ratings of overall job performance. While these correlations were not significantly different, further analysis revealed that objectively tested abilities accounted for a significant increment in prediction of overall job performance, beyond that accounted for by self-assessments. Self-assessments, however, accounted for almost no additional variance in the criterion beyond that accounted for by tested abilities. (Author)

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# Self Assessments vs. Objective Tests: A Question of Incremental Validities[1]

by

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Self-assessments vs. Objective Tests: A Question of Incremental Validities

## INTRODUCTION

Two recently published articles (Levine, Flory and Ash, 1977; De Nisi and Shaw, 1977) illustrate current interest in the possible use of self-assessments as a selection device. Levine et al (1977) noted that if self-assessment does, in fact, provide veridical, valid information, such a measure would be beneficial to an organization in that it should: a) reduce selection costs by eliminating the need for the administration of predictor tests, b) possibly reduce employee challenges to selection systems, and c) be useful as a criterion against which to validate other assessment procedures.

Levine et al (1977) present data which show a majority of self-assessments of clerical abilities to be significantly correlated with both tests of clerical abilities and supervisor ratings of job performance. Data are also presented showing strong relationships between self-assessment and typing test scores. These relationships occurred whether or not employees were told they would be tested.

From a different perspective, De Nisi and Shaw (1977) argued that self-assessment cannot effectively be substituted for ability tests as predictors of job performance. Using a non-industrial sample, these authors found nine of ten correlations significant between self reported and tested abilities. They argued, however, that the magnitude of these correlations (which ranged from .05 to .41) were too small to be of "practical significance".

However, the major reason for their negative appraisal of self-assessment was the fact that the tested scores for those who rated themselves "high" on self-assessment were not significantly different from the tested scores of those who rated themselves as "low" (low being defined by these authors as a self-assessment of three on a five point scale). Finally, without presenting the data or the method of analysis, these authors note that splitting the sample on such variables as sex, self esteem, or social desirability did not moderate the previously described correlations.

Unfortunately, neither of the above studies had adequately tested the value of self-assessment as a selection device. Since any significant relationship between a predictor and criterion suggests that the predictor may be a useful selection device, it is inappropriate to dismiss self-assessments on the grounds of practical significance until other factors are taken into consideration (e.g., selection ratio, base rate, validity of alternative procedures, cost of testing). De Nisi and Shaw's second criticism of self-assessments (that they do not significantly differentiate between high and low scorers on tested ability) is not supported by the evidence they present. In order for this criticism to be valid, they would first have had to show that these tests of ability themselves were substantially related to the criterion. Without this evidence, one does not know whether it is the self-assessments or the objective tests of ability which are at fault. Likewise, one cannot advocate the use of self-assesments in place of objective tests of ability as Levine et al have done, unless one assesses the validity of one relative to the other.

Neither Levine et al, nor De Nisi and Shaw present information regarding the validity of their ability tests as selection procedures. Thus, it is impossible to evaluate accurately the relative effectiveness of self-assessment as a selection device since there is no basis for comparison. The present study was designed to deal with the relative validity of self-assessments by examining their validity as compared to the validity of objective ability tests

## METHOD

Subjects: Participants in the study were 60 male and 45 female Accounting Clerks from a large multi-plant manufacturing organization. The subjects volunteered to take tests as part of a concurrent test development and validation project. All participants in the study were required to have less that five years experience in their present job classification, since it was felt that these individuals would more accurately represent the population of applicants than would individuals with more than five years seniority.

The average age of the males in the sample was 32.5 years while females had an average age of 38 years. Males had an average of 2.77 years of job experience while females had 2.38 years. The age difference was statistically significant ($t = 2.93$, $p < .01$) while the difference in job experience was not. Males in this sample also had significantly more years of formal education (14.65) than did the females (12.80), ($t = 7.20$, $p < .01$).

Based on a job analysis, eight performance dimensions were identified These dimensions, on which job performance ratings were obtained, are as follows: 1) Completing work assignments accurately and on time; 2) Detecting erroneous or inappropriate entries; 3) Organization of work material; 4) Ability to work independently; 5) Neatness and penmanship; 6) Troubleshooting; 7) Effectiveness in dealing with others; and 8) Knowledge of basic bookkeeping concepts. In addition, raters evaluated each employee on Overall Performance Effectiveness.

Tests: Tests were administered to employees who volunteered to attend one of four group testing sessions held approximately two weeks after criterion data (i.e , ratings) had been obtained The test battery consisted of eight tests selected to measure skills and abilities which were ascertained to be necessary for effective job performance based on the job analysis. These tests covered knowledge of elementary bookkeeping principles, arithmetic, and general clerical skills (e.g , coding filing, checking, etc.).

Specifically, the tests investigated here were: Short Tests of Clerical Ability (STCA): Coding, Filing, and Checking (Palermo, 1973): Short Employment Tests (SET): Clerical Aptitude (Bennett and Gelink, 1972): Minnesota Clerical Test: Names and Numbers (Andrew and Patterson 1959); Basic Business Arithmetic Test and Basic Business Bookkeeping Test, developed by the authors specifically for this project to measure the basic arithmetic and bookkeeping skills determined from the job analysis to be necessary for the jobs being studied.

Self Assessment: Prior to test administration, subjects were asked to rate themselves on ten dimensions chosen to measure the areas covered by the tests as well as other content areas judged (from the job analysis) to be important aspects of job performance. Subjects used fifteen-point scales which ranged from very good to very poor. Subjects were informed that these data were to be used strictly for research purposes.

Biographical Information: Prior to testing, subjects also completed a brief biographical information sheet providing data on age, sex, job tenure, educational level and prior training.

## RESULTS

Since generally high positive correlations were found among the eight tests (average r = .47, range = .15 to .71), a total "tested ability" measure was obtained by converting all eight tests to z scores and summing. Similarly, generally high correlations were found among the self-assessments of the above tested abilities (average r = .55, range = .37 to .78). Thus, these self-assessment ratings were also converted to z scores and summed to obtain a total self-assessment measure. Table 1 presents the correlations between these measures and supervisors' ratings of overall job performance.

As the table shows, both tested and self-assessed ability are significantly related to overall job performance (i.e., are "valid" predictors). These validity coefficients are not significantly different ($t = 1.70$, $p > .05$). Although self-assessments were significantly related to tested ability, these measures do not have a large portion of variance in common (approximately 7%). To determine the relative validity of these measures, two step-wise regression equations were computed. In the first equation, self-assessments were used as the first predictor of overall job performance with tested ability entered second. This procedure was reversed for the second equation (i.e., tested ability was entered first while self-assessments were entered second). Results of these analyses are presented in table 2.

As the table shows, self-assessed and tested ability combined account for about 18% of the variance in overall job performance. However, in comparing the two measures, tested ability accounts for 14% of the variance in overall job performance above and beyond that accounted for by self-assessment (see equation 1). This increment is statistically significant ($F = 15.5$, $p < .01$). From the other perspective, self-assessments did not account for a statistically significant increment in variance in overall job performance beyond that accounted for tested ability ( 5%) Individually, self-assessments accounted for about 4% of the total variance in overall job performance while tested ability accounted for approximately 17%

## DISCUSSION

Although the possibility of utilizing self-assessments for selection purposes in place of psychometric measures of specific abilities has been debated, empirical evidence supporting this approach has been lacking. The current study provides such evidence. Results indicated that for the total sample both self-assessments and tested abilities were significantly related to supervisory ratings for job performance. While tested ability accounted for a larger percentage of the variance in the criterion, this difference was not statistically significant. However, when the unique contribution of each type of predictor was examined, tested abilities were found to account for a substantial amount of criterion variance above and beyond that accounted for by self-assessments. Conversely, self-assessments accounted for very little variance beyond that accounted for by tested ability.

It has been suggested by others (De Nisi and Shaw, 1977) that self-assessment for selection is inappropriate since in such a situation, job applicants would be motivated to inflate their own abilities. In this sense, our data may represent an overestimate of the value of self-assessments. Our data were collected as part of a concurrent test validation study. Subjects were aware that after indicating what their estimates of their abilities were they would be tested on various abilities related to their job. Care was taken to assure subjects that both self-assessments and test scores would not affect their jobs in any way. Thus, subjects had more motivation to be accurate in their assessments than would be likely in an employment application setting.

It has also been suggested that rather than using self-assessments in place of tested ability, they be used in conjunction with each other (Thornton, Ref. Note 1). Our data suggest that this procedure would be of minimal value for employment selection decisions. However, the results obtained in this study may be applicable only to the types of abilities measured here (i.e., clerical and numerical abilities). For example, self-assessments may prove superior to the existing objective measures of abilities such as empathy, oral communication or getting along with others. It remains the task of future research to expand or limit these findings.

It should be noted that self-assessments may offer other benefits in addition to their use as an alternative means of personal selection. For examining the construct validity of criterion measures or for understanding organizational behavior, self-assessment may offer considerable value

## Reference Notes

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TABLE 1

CORRELATIONS AMONG SELF-ASSESSMENTS, TESTED ABILITY AND RATINGS OF OVERALL JOB PERFORMANCE

| | Self-Assessment | Tested Ability | Supervisory Ratings Of Overall Job Performance |
|---|---|---|---|
| Self-Assessment | - | .27** | .20* |
| | | (n = 106) | (n = 95) |
| Tested Ability | | | .42** |
| | | | (n = 95) |

* $p < .05$
** $p < .01$

TABLE 2

PREDICTORS OF OVERALL JOB PERFORMANCE:

| | Variable | Multiple R | R Square | Change in R Square |
|---|---|---|---|---|
| Equation 1 | Self-Assessment | .198* | .039 | - |
| (n = 94) | Tested Ability | .421** | .178 | .138** |
| Equation 2 | Tested Ability | .415** | .172 | - |
| (n = 94) | Self-Assessment | .421** | .178 | .005 |

* $p < .05$
** $p < .01$